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<b>INFORMATION DISCLOSURE STATEMENT BY APPLICANT</b> ( Not for submission under 37 CFR 1.99)	Application Number		10777033
	Filing Date		2005-02-11
	First Named Inventor	Tonkovich	
	Art Unit	1754	
	Examiner Name	Paul A. Wartalowicz	
	Attorney Docket Number	VELOP0115US	

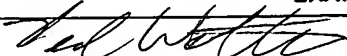
U.S. PATENTS								
Examiner Initial*	Cite No	Patent Number	Kind Code <sup>1</sup>	Issue Date	Name of Patentee or Applicant of cited Document	Pages, Columns, Lines where Relevant Passages or Relevant Figures Appear		
<i>BJ</i>	1	7255845		2007-08-14	Tonkovich et al.			
<i>BJ</i>	2	6969505		2005-11-29	Tonkovich et al.			
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Examiner Initials*	Cite No	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc), date, pages(s), volume-issue number(s), publisher, city and/or country where published.	T <sup>5</sup>
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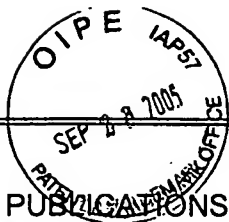
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Form PTO-1449 (Modified)  <b>LIST OF PATENTS AND PUBLICATIONS FOR APPLICANT'S INFORMATION DISCLOSURE STATEMENT</b>  (Use several sheets if necessary)	Atty Docket No. <b>VELOP0115US</b>	Serial No. <b>10/777,033</b>
	Applicant: <b>Tonkovich et al.</b>	
	Filing Date <b>02/11/04</b>	Group <b>1754</b>

## U.S. PATENT DOCUMENTS

Examiner Initial	Document Number	Date (MM/YYYY)	Name	Class	Sub-class	Filing Date if Appropriate

## FOREIGN PATENT DOCUMENTS

Examiner Initial	Document Number	Date (MM/YYYY)	Country	Class	Sub-class	Translation	
						Yes	No
<i>MA</i>	2004/016346 A1	26/02/04	WO				
<i>↓</i>	2004/037418 A2	06/05/04	WO				
<i>✓</i>	101 10 465 A1	02/10/02	DE				X

## OTHER ART

Examiner Initial	Author, Title, Date, Pertinent Pages, etc.
<i>MA</i>	International Search Report and Written Opinion, Application No. PCT/US2005/000623, mailed May 31, 2005.
EXAMINER	DATE CONSIDERED
<i>[Signature]</i>	<i>12/7/07</i>

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	Applicant: <b>Tonkovich et al.</b>	
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## U.S. PATENT DOCUMENTS

Examiner Initial	Document Number	Date (MM/YYYY)	Name	Class	Sub-class	Filing Date if Appropriate
<i>FW</i>	2004/0156762	08/2004	Schuppich et al.	422	191	
	2004/0144421	07/2004	Parce et al.	137	14	
	2004/0143059	07/2004	Cabrera	524	800	
	2004/0141893	07/2004	Martin	422	198	
	2004/0136902	07/2004	Plath et al.	423	651	
	2004/0132832	07/2004	Espinoza et al.	518	716	
	2004/0131829	07/2004	Joseph et al.	428	166	
	2004/0131507	07/2004	Saitmacher et al.	422	111	
	2004/0131345	07/2004	Kylberg et al.	392	465	
	2004/0130057	07/2004	Mehrabi et al.	264	171.13	
	2004/0127352	07/2004	Jin et al.	502	322	
	2004/0125689	07/2004	Ehrfeld et al.	366	165.1	
	2004/0123626	07/2004	Caze et al.	65	17.2	
	2004/0107831	06/2004	Graham et al.	95	96	
	2004/0104010	06/2004	Kenny et al.	165	80.4	
	6,773,684	08/2004	Lesieur et al.	422	198	
	6,770,245	08/2004	Akporiaye et al.	422	82.12	
	6,769,444	08/2004	Guzman et al.	137	15.01	
	6,764,660	07/2004	Wiede, Jr. et al.	422	198	
	6,756,515	06/2004	Rende et al.	585	444	
	6,756,340	06/2004	Voskoboynikov et al.	502	328	
	6,755,211	06/2004	O'Connor et al.	137	554	
	6,749,817	06/2004	Mulvaney, III	422	200	
	6,749,814	06/2004	Bergh et al.	422	130	
	6,747,178	06/2004	Harston et al.	570	175	
	6,746,819	06/2004	Schmitz et al.	430	272.1	

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Examiner Initial	Document Number	Date (MM/YYYY)	Name	Class	Sub-class	Filing Date if Appropriate
	6,746,651	06/2004	Ponzo et al.	422	220	
	6,675,875	01/2004	Vafai et al.	165	80.4	

## FOREIGN PATENT DOCUMENTS

Examiner Initial	Document Number	Date (MM/YYYY)	Country	Class	Sub-class	Translation	
						Yes	No
<i>[Signature]</i>	2004/067708 ✓	08/2004	WO				
	2004/067492 ✓	08/2004	WO			Abs.	
	2004/067444 ✓	08/2004	WO				
	2004/067160 ✓	08/2004	WO				
	2004/062792 ✓	07/2004	WO				
	2004/062791 ✓	07/2004	WO				
	2004/062790 ✓	07/2004	WO				
	2004/054696 ✓	07/2004	WO				
	2004/054013 ✓	06/2004	WO				
	2004/052941 ✓	06/2004	WO			Abs.	
	2004/052530 ✓	06/2004	WO				
	2004/052518 ✓	06/2004	WO			Abs.	
	2004/050799 ✓	06/2004	WO				
	2004/045760 ✓	06/2004	WO			Abs.	
	03/026788 ✓	04/2003	WO				
	1 311 341 B1 ✓	08/2001	EP				X

## OTHER ART

Examiner Initial	Author, Title, Date, Pertinent Pages, etc.
<i>[Signature]</i>	Besser, Ronald S. "New Directions in Reactor Design Through Miniaturization". 9/13/02, Tulane Engineering Forum.
<i>[Signature]</i>	Ouyang et al. "Flexible Microreactor System for Chemical Research at Moderate and High Temperatures". Stevens Institute of Technology.
EXAMINER <i>[Signature]</i>	DATE CONSIDERED 12/7/07

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LIST OF PATENTS AND PUBLICATIONS  
FOR APPLICANT'S  
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Atty Docket No.

VELOP0115US

Serial No.

10/777,033



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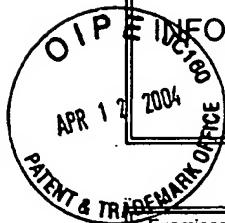
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
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Group

## U.S. PATENT DOCUMENTS

Examiner Initial	Document Number	Date	Name	Class	Subclass	Filing Date if Appropriate
	4,298,354	11/03/81	Hardman et al.	44	56	
	4,392,362	07/12/83	Little	62	514	
	4,516,632	05/14/85	Swift et al.	165	167	
	4,596,782	06/24/86	Courty et al.	502	302	
	5,238,895	08/24/93	Marchionna et al.	502	169	
	5,254,520	10/19/93	Sofianos	502	307	
	5,309,637	05/10/94	Moriarty	29	890.054	
	5,317,805	07/07/94	Hoopman et al.	29	890.03	
	5,384,335	01/24/95	Tierney et al.	518	700	
	5,472,986	12/05/95	Van Dijk	518	705	
	5,610,202	03/11/97	Marchionna et al.	518	700	
	5,611,214	03/18/97	Wegeng et al.	62	498	
	5,727,618	03/17/98	Mundinger et al.	165	80.4	
	5,767,039	06/16/98	Yamagishi et al.	502	342	
	5,811,062	09/22/98	Wegeng et al.	422	129	
	5,858,314	01/12/99	Hsu et al.	422	211	
	6,114,279	09/05/00	Fukui et al.	502	342	
	6,126,723	10/03/00	Drost et al.	96	4	
	6,216,343 B1	04/17/01	Leland et al.	29	890.032	
	6,129,973	10/10/00	Martin et al.	428	166	
	6,192,596 B1	02/27/01	Bennett et al.	34	76	
	6,200,536 B1	03/13/01	Tonkovich et al.	422	177	
	6,220,497 B1	04/24/01	Benz et al.	228	118	
	6,230,408 B1	05/15/01	Ehrfeld et al.	29	890.039	
	6,313,393 B1	11/06/01	Drost	136	201	



Examiner Initial	Document Number	Date	Name	Class	Subclass	Filing Date if Appropriate
	6,342,538 B1	01/29/02	Matsumura et al.	518	715	
	6,352,577 B1	03/05/02	Martin et al.	96	4	
	6,381,846 B2	05/07/02	Insley et al.	29	890.039	
	6,415,860 B1	07/09/02	Kelly et al.	165	748	
	6,433,029	08/13/02	Fitzpatrick	518	706	
	6,486,219 B1	11/26/02	Janda et al.	518	706	
	6,488,838 B1	12/03/02	Tonkovich et al.	208	108	
	6,497,856 B1	12/24/02	Lomax, Jr. et al.	423	651	
	6,540,975 B2	04/01/03	Tonkovich et al.	423	659	
	5,611,214	03/18/97	Wegeng et al.	62	498	
	5,811,062	09/22/98	Wegeng et al.	422	129	
	6,129,973	10/10/00	Martin et al.	428	166	
	6,192,596 B1	02/27/01	Bennett et al.	34	76	
	6,200,536	03/13/01	Tonkovich et al.	422	177	
	6,488,838 B1	12/03/02	Tonkovich et al.	208	108	
	6,540,975 B2	04/01/03	Tonkovich et al.	423	659	
	6,200,536 B1	03/13/01	Tonkovich et al.	422	177	
	6,546,998 B2	04/15/03	Oh et al.	165	110	
	2002/0177741A1	11/28/02	Allison et al.	568	840	
	H1311	05/03/94	Nakamura et al.	518	713	
	3,176,763	04/06/65	Frohlich			
	4,128,409	12/05/78	Bennett	62	26	
	4,183,403	01/15/80	Nicholson	165	166	
	4,386,505	06/07/83	Little	62	514 R	
	4,392,362	07/12/83	Little	62	514 R	
	4,434,845	03/06/84	Steeb			
	4,516,632	05/14/85	Swift et al.	165	167	
	5,058,665	10/22/91	Harada	165	164	
	5,271,459	12/21/93	Daschmann	165	166	
	5,309,637	05/10/94	Moriarty	29	890.054	
	5,317,805	06/07/94	Hoopman et al.	29	890.03	
	5,324,452	06/28/94	Allam et al.	252	373	

Examiner Initial	Document Number	Date	Name	Class	Subclass	Filing Date if Appropriate
	5,518,697	05/21/96	Dalla Betta et al.	422	173	
	5,727,618	03/17/98	Mundinger et al.	165	80.4	
	5,858,314	01/12/99	Hsu et al.	422	211	
	5,911,273	06/15/99	Brenner et al.	165	167	
	5,927,396	07/27/99	Damsohn et al.	165	167	
	6,056,932	05/02/00	von Hippel et al.	423	376	
	6,159,358	12/12/00	Mulvaney, III et al.	208	46	
	6,167,952	01/02/01	Downing	165	167	
	6,193,501 B1	02/27/01	Masel et al.	431	170	
	6,203,587 B1	03/20/01	Lesieur et al.	48	61	
	6,216,343 B1	04/17/01	Leland et al.	29	890.032	
	6,220,497 B1	04/24/01	Benz et al.	228	118	
	6,228,341 B1	05/08/01	Hebert et al.	423	352	
	6,230,408 B1	05/15/01	Ehrfeld et al.	29	890.039	
	6,241,875 B1	06/05/01	Gough	208	106	
	6,274,101 B1	08/14/01	Sechrist	422	198	
	6,294,138 B1	09/25/01	von Hippel et al.	422	200	
	6,318,913 B2	11/20/01	Wakamiya et al.	396	576	
	6,364,007 B1	04/02/02	Fischer	165	166	
	6,381,846 B2	05/07/02	Insley et al.	29	890.039	
	6,389,696 B1	05/21/02	Heil et al.	29	890.039	
	6,497,856 B1	12/24/02	Lomax, Jr. et al.	423	651	
	2001/0024629 A1	09/27/01	Brauchle et al.	422	198	
	2001/0025705 A1	10/04/01	Nash et al.	165	167	
	2001/0030041A1	10/18/01	Boneberg et al.	165	166	
	2001/0051662 A1	12/13/01	Arcuri et al.	518	704	
	2002/0029871A1	03/14/02	Kern	165	151	
	2002/0031455 A1	03/14/02	Hippel et al.	422	173	
	2002/0051741 A1	05/02/02	ABE et al.	422	199	
	2002/0071797 A1	06/13/02	Loffler et al.	422	190	
	2002/0081473 A1	06/27/02	Hanai et al.	429	26	
	2002/0106539 A1	08/08/02	Chung et al.	429	19	



Examiner Initial	Document Number	Date	Name	Class	Subclass	Filing Date if Appropriate
<i>JS</i>	2002/0131907 A1	09/19/02	Iwasaki	422	110	

## FOREIGN PATENT DOCUMENTS

Examiner Initial	Document Number	Date	Country	Class	Sub-class	Translation	
						Yes	No
	97/32687	12/09/97	WO			Abstract	
	98/55812	10/12/98	WO				
	00/06295	10/02/00	WO				
	01/12312 A2	22/02/01	WO				
	01/54807 A1	02/08/01	WO				
	01/95237 A2	13/12/01	WO				
	0 903 174 A1 ✓	24/03/99	EP				
	1 018 485 A1 ✓	12/07/00	EP				
	03/106386 A2	24/12/03	WO				
	2,247,662 ✓	22/03/99	CA				
	39 26 466 A1 ✓	14/02/91	DE			x	
	1 362 634 A1	19/11/03	EP				
	03/078052 A1	25/09/03	WO				
	01/12753 A1 ✓	22/02/01	WO				
	0 885 086 B1 ✓	02/21/97	EP				
	01/10773 A1	02/15/01	WO				
	01/69154 A1 ✓	09/20/01	WO				
	00/76651 A1 ✓	21/12/00	WO				
	02/00547 A1 ✓	03/01/02	WO				
	02/02220 A1 ✓	10/01/02	WO				
	0 904 608 B1	19/12/01	EP				

## OTHER ART

Examiner Initial	Author, Title, Date, Pertinent Pages, etc.
<i>JS</i>	Matlosz et al.; "Microreactors as Tools in Chemical Research"; Microreaction Technology; IMRET 5: Proceedings of the Fifth International Conference on Microreaction Technology.
<i>JS</i>	Srinivasn et al.; "Micromachined Reactors for Catalytic Partial Oxidation Reactions"; AIChE Journal; November 1997; Vol. 43, No. 11; pp. 3059-3069.

Examiner Initial	Author, Title, Date, Pertinent Pages, etc.		
	TeGrotenhuis et al.; "Optimizing Microchannel Reactors by Trading-Off Equilibrium and Reaction Kinetics through Temperature Management; Prepared for presentation at IMRET 6 - 6 <sup>th</sup> International Conference on Microreaction Technology; March 2002.		
	Wegeng et al.; "Compact Fuel Processors for Fuel Cell Powered Automobiles Based on Microchannel Technology"; Fuel Cells Bulletin No. 28; pp. 8-13.		
	Rostami et al.; "Flow and Heat Transfer for Gas Flowing in Microchannels: a Review"; Heat and Mass Transfer 38 (2002) 359-367.		
	Smith, Eric M.; Thermal Design of Heat Exchangers. A Numerical Approach; 1997; Wiley; New York, pages 279-288.		
	Waku et al.; "Effects of O <sub>2</sub> Concentration on the Rate and Selectivity in Oxidative Dehydrogenation of Ethane Catalyzed by Vanadium Oxide: Implications for O <sub>2</sub> Staging and Membrane Reactors"; Ind. Eng. Chem. Res. 2003, 41, 5462-5466.		
	International Search Report, Application No. PCT/US03/23890, dated 10 December 2003.		
	M. Matlosz et al.; Microreaction Technology; Proceedings of the Fifth International Conference on Microreaction Technology; October 2001; Springer-Verlag.		
	Smith, Eric M.; Thermal Design of Heat Exchangers; A Numerical Approach; 1997; Wiley, New York.		
	Pettersen et al.; Development of Compact Heat Exchangers for CO <sub>2</sub> Air-Conditioning Systems; Volume 21, No. 3; pages 180-193; 1998; Great Britain.		
	Wadekar, V. V.; Compact Heat Exchangers; A Che's Guide to Ches; American Institute of Chemical Engineers; December 2000; pages 39-40; United States.		
✓	Kays, W. M.; Compact Heat Exchangers, Third Edition; 1984; Reprint Edition 1998 With Corrections; Kreiger Publishing Co.; Malabar, Florida.		
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